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TITLE : GRINDING MATERIAL OF ALUMINA-ZIRCONIA-TITANIA SYSTEM

ABSTRACT : PURPOSE: The titled grinding material applicable to heavy grinding fields, having improved grinding performances, obtained by adding ZrO_2 , TiO_2 and Y_2O_3 or a mineral of rare earth element containing Y_2O_3 as a melting additional matter to Al_2O_3 , melting them, cooling them rapidly.

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CONSTITUTION: In a grinding material of Al_2O_3 - ZrO_2 - TiO_2 system obtained by adding ZrO_2 and TiO_2 to Al_2O_3 , melting them, cooling them rapidly, preferably 0.05~7wt% Y_2O_3 or a mineral of rare earth element containing Y_2O_3 as another melting additional matter based on the total amounts of Al_2O_3 , ZrO_2 , and TiO_2 is added to them, so that grinding performances are improved and this grinding material is applicable to especially light grinding among heavy grinding, and applicable well to Ti alloy. The addition of Y_2O_3 or the mineral of rare earth element containing Y_2O_3 in the range crystallizes tetragonal system crystal of ZrO_2 in about 70~100% remaining ratio, precipitation ratio of α - Al_2O_3 of initial crystal is suppressed to \leq about 5%, and grinding performances can be improved.

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